

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

Office Action Response
U.S.S.N. 10/088,576
Page No. 4

IN THE CLAIMS:

Please amend the claims as shown in the following claim listing. Please cancel original Claims 1-24 without prejudice. Please add new claims 25-59. Please charge the excess claim fees associated with this amendment to Deposit Account No. 19-0733.

CLAIM LISTING:

1 – 24 (cancelled)

25. (New) A pressure lamination apparatus comprising:
a housing or frame;
a pressure box mounted in the housing or frame, the pressure box comprising upper and lower pressurable sections and a space between the upper and lower sections defining a lamination section;
counter rotating upper and lower drive belts, rotatably mounted in the housing or frame, wherein the belts contact one another at and pass in the same direction through the lamination section;
a fluid medium pressure generator for supplying pressure to the upper and lower sections of the pressure box for compressing the drive belts moving therebetween; and
whereby, depending upon the direction of rotation of the belts, one end of the lamination section acts as an inlet for substrates to be laminated and an opposite end acts as an outlet for pressure laminated materials;
wherein the pressure box further comprises pressure seals at the sides and the inlet and outlet ends and wherein the pressure seals comprise one or more rubber bladders.

26. (New) A pressure lamination apparatus, comprising:
a frame,

Office Action Response
U.S.S.N. 10/088,576
Page No. 5

two counter rotating upper and lower drive belts rotatably mounted in the frame and adapted to be movable in a same direction into said inlet of the lamination section and out of said outlet of the lamination section wherein the drive belts are adapted for receiving a substrate material therebetween for treatment within the lamination section, a pressure box mounted in the frame, said pressure box further comprising, spaced apart upper and lower plattens forming a space therebetween defining a lamination section having an inlet and an outlet for receiving the counter rotating upper and lower drive belts, a compressed air generator for supplying pressure within the space of the laminator section, at least one pressure seal mounted in the upper platten, said pressure seal contacting the upper drive belt so as to contain said pressure within said lamination section thereby compressing said upper belt and said lower belt against said substrate material.

27. (New) The lamination apparatus of claim 26, wherein the pressure seal is at least one bladder.

28. (New) The lamination apparatus of claim 26, further including heating and cooling elements within the interior of the lamination section for heating and cooling the upper and lower belts.

29. (New) A pressure lamination apparatus, including:
a frame;

a pressure box mounted in the frame, comprising spaced apart upper and lower sections forming a space therebetween defining a lamination section; two counter rotating upper and lower drive belts, rotatably mounted in the frame and adapted to be movable in the same direction through the space between the upper and lower sections of the pressure box, whereby in accordance with the direction of

Office Action Response
U.S.S.N. 10/088,576
Page No. 6

movement of the belts, one end of the pressure box acts as an inlet for a substrate material to be treated and an opposite end acts as an outlet for the treated substrate material; and a fluid medium pressure generator for supplying pressure to the upper and lower sections of the pressure box for compressing the drive belts moving therebetween, wherein the upper pressure box section comprises a pressure seal and wherein the pressure seal comprises at least one rubber bladder.

30. (New) The lamination apparatus of claim 29, wherein the pressure seals are located at the sides and the inlet and outlet ends of the pressure box.

31. (New) The lamination apparatus of claim 29, wherein the pressure seals comprise metal.

32. (New) The lamination apparatus of claim 29, wherein the at least one rubber bladder is provided with a slip-seal surface comprising a metal strip coated with PTFE.

33. (New) The lamination apparatus of claim 29, wherein the drive belts contact one another at the pressure box.

34. (New) The lamination apparatus of claim 29, wherein the upper section of the pressure box further comprises a heat source.

35. (New) The lamination apparatus of claim 34, wherein the heat source comprises a plurality of heating elements.

36. (New) The lamination apparatus of claim 34, wherein the heat source comprises a steam powered heating section.

Office Action Response**U.S.S.N. 10/088,576****Page No. 7**

37. (New) The lamination apparatus of claim 29, wherein the upper section of the pressure box further comprises a cooling source.

38. (New) The lamination apparatus of claim 37, wherein the cooling source comprises a plurality of cooling elements.

39. (New) The lamination apparatus of claim 38, wherein the upper section of the pressure box further comprises a plurality of heating elements.

40. (New) The lamination apparatus of claim 37, wherein the cooling source comprises a cold water cooling section.

41. (New) The lamination apparatus of claim 29, wherein the lower section of the pressure box further comprises a heat source.

42. (New) The lamination apparatus of claim 41, wherein the heat source comprises a plurality of heating elements.

42. (New) The lamination apparatus of claim 42, wherein the heating elements in the lower section are fixed in place.

43. (New) The lamination apparatus of claim 41, wherein the heat source comprises a steam powered heating section.

44. (New) The lamination apparatus of claim 41, wherein the heat source employs infra-red heating.

Office Action Response**U.S.S.N. 10/088,576****Page No. 8**

45. (New) The lamination apparatus of claim 29, wherein the lower section of the pressure box further comprises a cooling source.

46. (New) The lamination apparatus of claim 45, wherein the cooling source comprises a plurality of cooling elements.

47. (New) The lamination apparatus of claim 46, wherein the lower section of the pressure box further comprises a plurality of heating elements.

48. (New) The lamination apparatus of claim 45, wherein the cooling source comprises a cold water cooling section.

49. (New) The lamination apparatus of claim 46, wherein the cooling elements are each provided with water fed cooling pipes.

50. (New) The lamination apparatus of claim 47, wherein the cooling elements in the lower section are fixed in place.

51. (New) The lamination apparatus of claim 39, wherein the plurality of heating and cooling elements in the upper section of the pressure box are mounted so as to float on top of the substrate materials.

52. (New) The lamination apparatus of claim 39 or claim 47, wherein the plurality of heating and cooling elements are arranged in a staggered configuration.

53. (New) The lamination apparatus of claim 29, wherein the lower section of the pressure box is mounted rigidly to the frame.

Office Action Response
U.S.S.N. 10/088,576
Page No. 9

54. (New) The lamination apparatus of claim 29, wherein the upper section of the pressure box is mounted to the frame in an adjustable manner.

55. (New) The lamination apparatus of claim 29, wherein the drive belts are pressurized within a range of from about 5000 lbs to about 50,000 lbs, over an area of about 1500 square inches.

56. (New) The lamination apparatus of claim 29, wherein the drive belts are pressurized within a range of from about 10,000 lbs to about 25,000 lbs, over an area of about 1500 square inches.

57. (New) The lamination apparatus of claim 29, wherein the drive belts are pressurized at about 15,000 lbs over an area of about 1500 square inches or 10 psi.

58. (New) The lamination apparatus of claim 29, further comprising an alignment system, including an electric eye, an alignment servo and an alignment carriage, wherein the electric eye is adapted to detect either of the belts moving out of alignment and capable of activating the alignment servo so as to cause the belts to be adjusted by lateral movement of the alignment carriage.

59. (New) A laminated non-woven fabric formed in the apparatus of claim 29, said laminated fabric comprising:

a first non-woven layer and a second non-woven layer laminated to one another to form a laminated composite fabric;

said first non-woven layer having yarns aligned in the machine direction;

said second non-woven layer having yarns aligned substantially perpendicular to the machine direction;

Office Action Response
U.S.S.N. 10/088,576
Page No. 10

said laminated composite fabric further including a film of adhesive disposed between the first and second non-woven layers.

REMAINDER OF PAGE INTENTIONALLY BLANK